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The New Importance of Costs

(Editorial comment from The Journal of Accountancy, January)

IT has often been asserted that the development of cost accounting in the United States owes little to the professional certified public accountant and that even up to the present day he has failed to pay enough attention to this important aspect of accounting. Engineers and privately employed accountants, abetted by a few practising certified public accountants who have more or less specialized in the subject, claim most of the credit for the remarkable progress of costing in this country. Whatever the merits of these contentions, it seems quite clear at present that the certified public accountant who would act as business advisor to his clients—a rôle which more practitioners are assuming every year—must thoroughly understand the principles underlying installation and operation of a sound cost system, as well as interpretation of the data it makes available.

Government regulation of business is bound to include, in an increasingly important degree, this puzzling question of costs. Accountants will need no reminder of the debates which raged in the palmy days of N.R.A. over what constituted "selling below cost." Should the criterion be "cost to manufacture" or "over-all cost"—the latter including expenses incident to distribution, general administration and financing of operations? Should administrative expenses be divided between manufacturing and selling? Should depreciation be calculated on the basis of replacement value? Should interest on investment be included as an element of cost?

Robinson-Patman Act

Equally complex problems will present themselves for solution under the Robinson-Patman Act which, as every one knows, is directed against unfair price discrimination between different purchasers of commodities of like grade and quality, and against unfair price cutting to any purchaser in the sale of any commodity. The act does not prohibit all differentials in prices, but the justification for a price discrimination of the type covered by the act must be proved by the respondent to a complaint. Perhaps the most important justification which will be accepted is that the price discrimination be not in excess of due allowance for differences in manufacturing, selling or delivery cost resulting from the differing methods or quantities in which the commodities in question are sold or delivered to the favored purchaser.

Since the burden of proof is on the respondent, "it appears at once," as Nelson B. Gaskill puts it, "that due allowance for cost differ-

ences is practically useless to the manufacturer who has not a good cost-accounting system or to one who does not apply it properly." Mr. Gaskill, who was at one time chairman of the Federal Trade Commission, points out that "to advance this defense the respondent tenders himself as a witness. He offers cost calculations taken from his own records. He can be cross-examined and compelled to answer and his records are open to inspection and his submitted data to check by government accountants.

"Consequently, if he has no cost-accounting system, he had better set one up or abandon this ground of justification. If he has a cost-accounting system but is not sure of it, he might well have it checked up or not rely too heavily on this defense."

The niceties of technical problems which may be involved in conducting business under this act are indicated in a recent address by a member of the Institute, Eric A. Camman. He calls attention to such perplexing propositions as dividing a salesman's salary between the products he sells, or dividing the cost of general advertising or the salary of the president of the company among commodities of differing grade and quality. He says, for example, that factory overhead or burden must be equitably and uniformly applied and not imputed disproportionately to different classes of trade—in other words, additional volume of business can not be taken at a price which ignores all or part of the overhead on the reasoning that such overhead would be incurred whether or not the additional volume of business were taken.

Federal Licensing Act

The Robinson-Patman act, of course, attempts to regulate only one important phase of business activity. Ever since the election the wires have been hot with rumors that a bill to provide for federal licensing of corporations would surely be introduced in the seventy-fifth Congress. Commentators first prophesied that the O'Mahoney bill, introduced last year, would be revived, but there have been recent reports of a conclusion by government attorneys that it would not stand the test of constitutionality. The opinion prevails, nevertheless, that something of the kind may be enacted, and if it is anything like the O'Mahoney bill there will be further compelling reasons why every corporation, large or small, which engages in interstate commerce must maintain complete cost and financial records. The O'Mahoney bill was largely concerned with labor provisions similar to those of N.R.A., but it incidentally included extremely broad regulatory powers over other phases of business activity. For example, it authorized and directed the Federal Trade Commission to "develop a general program for the co-ordination, stabilization and orderly development of the basic industries of the United States and for a more equitable distribution of the earnings of commerce, trade, and industry to those employed therein and to the investor of capital therein . . ."

The fundamental principle and objective of the bill was stated as follows: "Rates of pay of employees shall be increased, and hours of work shall be reduced in accordance with gains in the productive efficiency of industry arising from increased mechanization, improvements in technological methods, or from other causes, to the end that employees shall have an equitable participation in the output of industry, and that employment and mass purchasing power may keep pace with the productive accomplishment of industry."

With that objective in view, the commission was authorized, in facilitating collective bargaining, to secure from companies licensed under the act "all relevant and detailed data as to production cost, prices, and profits, or as to other questions at issue. . . ."

It needs no great imagination to visualize the difficulties which might confront a corporation which lacked a complete and adequate cost-accounting system in defending itself against a complaint under a provision of this kind.

Of course, this particular provision may never be enacted. None the less, the fact that the bill which contains it was said to be regarded sympathetically by the administration, together with the Robinson-Patman act (which is described by a competent observer as definitely not an emergency measure, but presumably a permanent expression of congressional policy with respect to commercial competition), is sufficient indication that business generally may frequently have to account to the government for its costs. The certified public accountant who would serve his client fully will familiarize himself with the problem and with the best available means of dealing with it.

Wastage in Material

By K. J. BENNETTS, A.C.A.A.

(From a lecture delivered to the Cost Research Society of New South Wales. Reprinted from the Australian Accountant).

THE New South Wales Government Statistician shows that last year materials used in New South Wales factories amounted to £87,096,873. I ask you to consider this, that, if there were a loss due to needless wastage of only 1 per cent. it would be equal to nearly a million pounds.

Economists may tell us that waste as we know it is not really lost, that what has been one industry's loss becomes another industry's gain. That reasoning is lost on shareholders, especially when the Chairman of Directors is endeavouring to explain why there will be no dividend.

WASTAGE IN MATERIAL

Wastes that are associated with material arise in its purchasing, in its storing, in its receiving, in its issuing, in its passage through the manufacturing departments, and through laxity and error both in the production and in the accounting departments. At every stage from the time material is ordered until the finished product has been delivered to the customer there is a potential source of waste.

These may be classified under two general headings:

(1) Those that are known.

(2) Those that are secreted.

One could elaborate on each of these groups in general terms. One could treat with wastes from speculative buying or from buying at unnecessarily high prices. Then there are wastes which have their origin in damages in the store, from excessive issues, from incorrect records or from spoiled work.

I don't want to show you those wastes with which you daily come in contact. I want to take you through fresh fields. Instead of showing you requisitions and that which they should contain: instead of telling you whether they should be prepared by foremen or by workmen: instead of showing you various forms of stock ledgers and stating whether it is necessary to keep bin cards in the store: instead of dwellings on things which are dealt with at length in many textbooks, I want to speak on some vital wastes that are commonly overlooked.

By their nature, these wastes are difficult to control. When a plan to stop these wastes is being created one may very well wonder where to begin. The seeming magnitude of the task is probably the reason why in so many instances it has been avoided. Yet if four basic laws are followed a plan will evolve that will give complete control.

Those four laws are so fundamental in a plan to control waste, that any plan in which they are not observed may be considered valueless.

My talk is divided into two sections. First I wish to enunciate the four laws to be observed in the control of waste. Then I want to show you practical applications of each.

These four laws are:

(1) Determine Standards of Quality.

(2) Determine Standards of Quantity.

(3) Determine Standards of Performance.

(4) Measure Actual Conditions with these Determined Standards.

The first law assures that the right material will be used. The second assures the use of the right quantity. The third assures that the material will be used in the right way. The fourth law as-

sures that management will not overlook the observance of the other three laws.

Standards of Quality

Figure 1 is an illustration of the manner of determining standards of quality in wool yarn.

When a purchase order is placed for wool yarn the manufacturer naturally expects to receive wool yarn, but usually he receives wool yarn and water.

Wool yarn has many peculiar properties, one of which is its tendency to absorb moisture. Therefore, when the manufacturer receives 100 lbs. of yarn, he must make some test to assure that he is not getting water in undue quantities.

This peculiarity of absorbing moisture cannot be dissociated from wool, and the Bradford Conditioning House in England has fixed what is termed an allowable moisture content per lb. of conditioned wool yarn. Therefore the manufacturer has to determine for himself whether this allowable moisture content has been exceeded.

Figure 1
WOOL YARN
TEST FOR MOISTURE CONTENT

Purchase		lbs.
4 bales of 1/20's.	Gross Weight	2400
	Less tare	140
	Net weight	2260
Test of 12 lots selected from each bale		grammes.
Original weight		2147.000
Dry weight		1774.000
Moisture content		373.000
Moisture content in original weight		17.37%
Recalculation of weights received		lbs.
Original net weight		2260
Less moisture content—17.37%		392.5
Dry weight received		1867.5
Add allowable regain 18¼%		340.8
Weight of conditioned wool purchased		2208.3
Claim for excess moisture		51.7

In this illustration 2,260 lbs. net weight of yarn has been purchased. From each of the bales 12 sample lots have been selected and weighed. These samples are then dried out and weighed again, the moisture content of the original weight being 17.37 per cent. The whole purchase may then be revalued to ascertain the weight of conditioned yarn.

The original weight is reduced by the total moisture content to ascertain the dry weight received. To this dry weight is added the

allowable regain, fixed by the Bradford Conditioning House, this giving the weight of properly conditioned yarn. The variation from the weight invoiced represents the excess moisture and may be the subject of a claim.

If these tests are not made we may have a position where there are issues strictly on requisition, we may have bin cards in the raw material store to check the stock, we may have stock ledgers in the office balancing with the raw material itself, and yet we may have considerable wastage in the material because the first law of material control has been disregarded, namely that standards of quality must be determined.

Standards of Quantity

Figure 2 demonstrates how standards of quantity are determined. It is taken from an engineering factory and shows standards of quantities for which purchase orders should be placed.

When quotations for purchases are invited, these may specify a falling unit price for larger orders. Management then has to determine the size of each purchase which will secure the most economical cost having regard to factors such as lower unit price, stock turnover and storage.

This table shows the calculated cost of the year's supply purchased in lots varying from 500 to 2,000.

The size of the order and unit price need no explanation other than that they are used to calculate the total purchase price of the 5,000 needed in one year. For example, where orders are placed in lots of 500 the total price for 5,000 would be 5,000 multiplied by 2/5¼.

The expense of the buying department expressed as a cost per unit requires some explanation. It has been found that in this buying department the cost of handling each purchase order is 2/6. The cost per unit for a purchase order of 500 units would therefore be 0.06 of a penny. If each order was for 1,500 units the cost per unit would be 0.02 of a penny. This cost per unit falls as the quantity in units of each order increases. If the cost per unit is multiplied by 5,000 the buying department expense for the year's supply is ascertained.

If the cost per unit is multiplied by 5,000, the buying department expense for the year's supply is ascertained.

The average stock carried, if all stock were used before the next order was placed, would be equal to half the quantity in the order, but in this case there is a minimum stock of 200 units. So that the average stock carried, if orders were placed in lots of 500, would be half of 500, plus 200. As the size of the orders increases so does the average stock. The value of the average stock carried is of course the average quantity multiplied by the unit cost.

The total cost line shows the cost of the 5,000 needed in a year if that 5,000 be purchased in varying lots.

Management may be lured by savings on discounts for bigger orders or may believe in purchasing from hand to mouth for quick stock turnover. The quantities for which purchase orders are placed are then dependent upon which ever view is held by management.

Stock is purchased and placed in the store, but before any of it has been issued to the factory departments, wastage in material may have taken place, because management may have violated the second law of material control by failing to determine standards of quantity.

Figure 2

CALCULATION OF ECONOMIC LOT PURCHASE

1. Size of order (units)	500	800	1,000	1,500	2,000
2. Price per unit	2/5¼	2/4½	2/3¾	2/3¼	2/2¾
3. Buying Department expense (per unit)	.06	.037	.03	.02	.015
4. Average stock carried (units)	405	600	700	950	1,200
5. Value of average stock carried	£54 16 10	£71 5 0	£80 4 2	£107 17 3	£133 15 0
Price	609 7 6	593 15 0	578 2 6	567 14 2	557 5 10
Buying Department expense	1 5 0	0 15 5	0 12 6	0 8 4	0 6 3
Storage, etc., per unit	7 10 0	10 0 0	11 13 4	15 16 8	20 0 0
per value	5 9 11	7 2 6	8 0 5	10 15 9	13 7 6
Total cost	£623 12 5	£611 12 11	£598 8 9	£594 14 11	£590 19 7

Standards of Performance

The purpose of Figures 3 and 4 is to predetermine standards of performance for material used in the underwear trade.

In this trade it is the practice to calculate the cost of the material in the samples by weighing the samples themselves and extending that weight at the cost of knitted cloth.

The weight of the cloth itself may be affected by such factors as dampness, heat, length of time that the cloth has been knitted, or even by the length of time that the yarn itself has been spun. Therefore, in determining standards of performance, management must look to something more accurate than merely the weighing of the finished sample to determine the cost of the cloth used.

WASTAGE IN MATERIAL

When standards of performance have been properly determined the sample may be costed before it has been made.

Although yarn is purchased by weight, and although the costs of knitting are expressed as a cost per lb., the total cost of the finished cloth first should be converted to a cost per inch or per foot for the purpose of calculating the cost of the sample. In the chart shown, the cost of the cloth is 5/7 per lb., comprising a yarn cost of 4/7 and a knitting cost of 1/-.

In the illustration shown the cloth is being knitted on a circular machine with 22 in. diameter. With the aid of the other technical details shown the cost per inch or per foot may be calculated for knitted material. All samples for finished garments made from the cloth may be costed by measuring the length of the material required to make the garment.

Figure 3

CONVERSION OF KNITTED MATERIAL COSTS INTO PENCE PER FOOT

Data	... per lb.
Yarn used 1/20's at	4/7
Knitting cost	1/-
Total	5/7
Machine used....22-inch circular machine.	
Courses per inch	16.
Take up	2.75

Calculation of number of feet to 1 lb. of yarn

$$\frac{506}{1} \times \frac{36}{1} \times \frac{20}{16} \times \frac{1}{2.75} \times \frac{1}{22 \times 31} = 133 \text{ inches per lb.}$$

$$= 11.1 \text{ feet to 1 lb.}$$

$$\text{Cost per foot} = \frac{5/7}{11.1} = 6\text{d.}$$

Cost of sample

Length of pattern	4 ft.
Cost per garment	2/-
Weight per garment	5.77 ozs.

The second part of this chart shows what is likely to happen when garments are costed merely by weight. In the illustration a coarser yarn is used in knitting the cloth. Instead of 5.77 oz. of cloth used there has been 6.34 ozs., which is equivalent to a loss of 10 per cent on that material.

The same condition will arise if the stitch is tightened and more courses are made to each inch of knitted material. These courses may be technically described as the number of wales knitted to make a given length of cloth.

Figure 4
COST OF USING COARSER CLOTH WHEN GARMENTS ARE COSTED BY WEIGHT
(A common plan)

True Cost (on which sample is based, i.e., 1/20's).
4 ft. = 5.77 ozs. @ 5/7 lb. = 2/– = cost per garment.
Actual Cost (using a 1/8 yarn @ 5/7 lb.)

$$\frac{560 \times 36 \times 18}{16 \times 2.75 \times 22 \times 3\,1/7} = 121 \text{ inches per lb.}$$

or, 10.1 feet per lb.
Pattern measures 4 ft., used 6.35 ozs. of cloth @ 5/7=2/2½
Loss = 2½d. on 2/– = 10%.

For the moment, let us assume that management is costing samples and is following the usual plan of weighing them, then extending that weight at some cost per lb. The samples when being weighed may have had all moisture dried out or they may contain an excessive amount. They may have been knitted from a yarn different from that shown on the cost sheets or the machine adjustment may have been varied from the original specification. Management then has this difficulty that when it receives reports of cutting losses and investigates them it will find that the original sample weights are perhaps open to question. Management will then be at fault through not having observed the third law of material control in fixing standards of performance before manufacturing begins.

Measuring Actual Conditions with Standards

Figure 5 serves to check continuously the quality of sole leather after the quality has been predetermined.

Before I show you the operation of this report, I think I will say something of the peculiarities of sole leather which necessitate this control.

Sole leather is purchased by weight, and in the process of tanning it may be loaded to increase the weight or it may be filled to increase the thickness. For this reason, cut soles may have different weights and thickness when cut from different lots of leather. If the leather as not been loaded and has not been filled, all similar shapes of the same thickness will weigh the same.

Therefore it is necessary for the manufacturer to determine whether leather has been loaded or filled. The purpose of the test on the different tannages he buys. The purpose of the test is to ascertain the weight in one square foot of leather of a gauge of one iron, which is one-fortieth of an inch. This may be shortly referred to as determining the specific gravity of the leather. To make this test,

Figure 5
Sole Department
TEST CUTTING
Comparison of Total Calculated Weights for Shapes Cut, with Actual Weights

Shape	Irons	No. of Pairs	Equivalent No. of Pairs of 1 Iron	Net Area Excluding Waste-Ft. per Pair	Weight per Iron per Square Foot	Total Calculated Weight
2	9½	4	38			
	9	10	90			
	8½	29	246½			
	8	71	568			
	7½	48½	364			
	7	38	266			
	6½	14	91			
			1663½	.587	.13	127
11	8½	½	4¼			
	8	2	16			
	7½	53	397½			
	7	30½	213½			
	6½	29	188½			
	6	3½	21			
			840¾	.3887	.13	42½
12	9½	1	9½			
	9	1½	13½			
	8½	½	4¼			
	8	1	8			
			35¼	.3526	.13	1¾
					Calculated Weight	171¼
					Actual Weight	171

the manufacturer selects a quantity of shapes which have been cut from the same tannage and calculates the total area of all shapes having the same thickness. This area is then multiplied by the number of irons to determine how much area would be in this particular selection if each shape were of a thickness equal to one iron. This total area is then divided into the weight of the material and its specific gravity or its average weight per iron per square foot is determined. In the past this manufacturer has made these tests and

has adopted a standard specific gravity measure of 0.13 lbs. per iron per square foot.

In this table we see the result of a test which is made at random on any cutting. A responsible person from the office makes this test. It shows the various shapes cut from the batch, the number of shapes of each thickness, valued at the number of irons and area, and the standard specific gravity, and thus is calculated what weight of material should be in those shapes if the actual specific gravity were 13 lbs. per iron per square foot.

This table is an actual test, and it shows that the calculated weight is equivalent to the actual weight, thus demonstrating that 0.13 lbs. per iron per square foot has been maintained in the leather supplied.

Let us take a condition where no such tests have been made, or let us take a condition where those standards have been predetermined, but no subsequent tests have been made to see that they are maintained.

Material would be issued to cutters, who would cut the material to the right shape and then pass those shapes into stock, but if the wrong leather has been purchased, waste material will result, because management will have failed to observe the fourth law of material control by not measuring actual conditions with predetermined standards.

Figure 6 is also used to measure actual conditions with determined standards of quality. It is used by a twine and cord manufacturer to test raw materials on a spinning frame.

In the first place, the quality is fixed according to the gauge of the spun hemp, which gauge is known as a lea. Each spinning machine may be adjusted to spin yarn of any number of leas within working limits, but at times the adjustment of the machines may alter, which immediately causes an alteration in the quality and in the quantity of material used. An alteration from a 5 to 4¾ lea will cause a variation of 5 per cent. in the material cost.

The purpose of this table is to give the production department some ready means of identifying variations in the cost of material whether through error or through machine adjustments.

The table shows the weight of material of any given lea that should be spun in a time ranging from 1 second to 1 hour.

This table has been prepared not by making tests on the machine itself, but according to the formula shown at the foot.

As well as checking material, it is also used for checking production within a given time, but as production is outside the scope of this lecture I will not disgress with that topic.

At frequent intervals, stop watch readings are made on bobbins

selected at random and the weight of material spun is checked with this table.

Where variations between the tested weight and the bobbins occur, technical checks are made for the correction.

Management may decide to make twine of a given quality and may properly calculate the quantity of yarn needed. Subsequently the adjustment of the machines may alter and a different yarn may be spun. Wastage in material will then take place and management will fail in its supervision through not observing the fourth law of material control, which is to measure actual conditions with standards.

Figure 6

HEMP SPINNING

Table of Weights Produced per Unit of Time

Spinning Machine No. 7651

Time	3 Lea.		4 Lea.		5½ Lea.		6 Lea.		7½ Lea.		8 Lea.		10 Lea.	
	Oz	Grs.	Oz	Grs.	Oz	Grs.	Oz	Grs.	Oz	Grs.	Oz	Grs.	Oz	Grs.
Seconds														
1		1		1		1		1						
2		2		2		1		1		1		1		1
3		3		3		2		2		1		1		1
4		4		4		2		2		2		2		1
5		5		5		3		3		2		2		2
6		6		5		4		4		3		2		2
7		8		6		4		4		3		3		2
8		9		7		5		5		4		..3		3
9		10		8		5		5		4		4		3
10		11		9		6		6		4		4		3
20		22		17		12		11		9		8		7
30		33		26		19		17		13		12		10
40		44		34		25		23		28		17		13
50		54		43		31		28		22		21		17
Minutes														
1		65		51		37		34		27		25		20
2		131		102		74		68		54		51		40
3		196		153		111		102		81		76		61
4		262		204		148		136		108		102		81
5		328		255		185		170		135		128		102
6		394		306		222		203		162		153		122
7	1	23		357		259		237		189		178		143
8	1	89		408		296		271		216		203		163
9	1	154	1	22		333		305		244		229		184
10	1	219	1	72		370		339		272		255		204
20	3	45	2	143	1	303	1	241	1	106	1	72		407
30	4	287	3	215	2	236	2	143	1	378	1	326	1	174

40	6	91	4	287	3	168	3	44	2	211	2	143	1	378
50	7	332	5	359	4	102	3	385	3	46	2	398	2	142
Hour														
1	9	136	6	430	5	35	4	287	3	317	3	215	2	347

Method of Calculation

1 Lea measures 300 yards to 1 lb.
Speed of roller = 25 r.p.m.
Diameter of roller = 4 inches.
Circumference of roller = 12 4/7 inches.
Length spun per minute = 314.285 inches.
Length spun per minute = 8.73 yards.
Length spun per hour = 523.8 yards.
300 yards = 16 ounces.
523.8 yards = 27.936 ounces.
= 27 ounces 409½ grains.
Weight produced per hour—1 Lea 27 ounces 409½ grains.

Hotel Costing and Control

(Costing and Control in the principal hotel services was dealt with by F. L. Chaplin, F.C.A., in an address before the Manchester and District Branch of the Institute of Cost Works Accountants recently. The following extracts are reprinted from The Cost Accountant).

ANY large class hotel is likely to offer its guests, in addition to food and lodging, many or all of the following facilities, all of which must be controlled:—Liquid refreshment at table, in public rooms or in bedrooms; Garage; Turkish; Medicinal and Swimming Baths; Hair-dressing; Tobacco Kiosk; Laundry and Valet Service; Billiards and in some cases Badminton, Squash, Tennis or Golf; Newspaper Stall; Shoeblack; Cloakroom accommodation; Booking Bureaux for railway tickets, hire cars, theatre tickets; Shorthand and typing; Kiosks for flowers, sweets, tobacco, toilet sundries, haberdashery; whilst for the lady guest a beauty parlour is sometimes provided.

Apart from all this the management has to control a maintenance staff including painters, joiners, steam engineers, electrical engineers, besides firemen, laundry workers, etc., and each of these sections has to be treated as a department and save money compared with giving work out.

Take any ordinary everyday event in the life of one of our customers, who very likely arrives without booking a room, but finds one

available. He enters the hotel, signs the visitors register, collects post from the hall porter (which, by the way, we had no information to lead us to expect), takes an evening paper for which he may or may not pay cash, has a couple of glasses of sherry in the Lounge, (choosing to give his room number rather than pay), orders a bottle of Vichy water to be sent up to his room, has a telephone call or two, orders a seat for the opera, dines, wines, leaves the hall porter to pay his taxis, leaves a call in the Hall for tea at 7 a.m., breakfast at 8 a.m. and his luggage to be on the 8.45 a.m. train to Glasgow. All this must be recorded and his bill be ready for 8 a.m. the following morning and very little hope of recovery in the case of chance customers if any item is missed. And this, if you please, out of a total turnover to the hotel of something between 20/- and 30/-, even less in the case of small provincial hotels.

In the time at my disposal it would be utterly impossible to attempt to detail methods of control in every department and I propose to leave all reference to departments with which you must be far more familiar than I—such as the kiosks, the maintenance departments and booking service — and confine myself to the sections particularly applicable to hotels, namely, apartments, baths, garage, food and liquor.

Apartments

In dealing with apartments it will be convenient to include the general bookkeeping and bill making, as it is at reception that you book your room and very close alongside where you pay your bill and, incidentally, where your luggage is freed for removal when the bill is paid.

The receptionist has a visible index of all rooms in the shape of a rack or a bedroom book, either of which, by signs, show the accommodation available in the room, such as double bed, twin beds, single bed with private bathroom, etc. It is the receptionist who sells the rooms and the moment a room is booked the following operations take place:v

(a) The room is marked off by the insertion of the customer's name on a slip in the index or written on the day's page in the bedroom book.

(b) The customer's name is written on a slip with the room number and inserted in an indexed folder for easy reference for messages and calls.

(c) The bill clerk is notified and in most cases a bill is commenced there and then by the insertion of the customer's name and the first night's apartments charge.

(d) A column is headed with the customer's name on the Tabular Sheet which is the account book of prime entry in hotel work.

The receptionist is informed by the cashier of all departures, thus the room is freed for re-sale. The housekeeper is instructed to put the room in order and the porter authorised to pass out the luggage.

In this connection, I think, a contraption now in use might be of interest to you. It takes the form of a small writing desk from the corners of which is wired a pencil and through which runs a roll of paper. A page boy, by writing the number of a room on the space provided, instructs telegraphically the correct floor to produce the luggage of the departing guest, the luggage room to collect, receive into the luggage room and be ready to load, and informs the front office of the impending departure in order to enable them to satisfy themselves that the departing guest has paid his bill.

It should be pointed out at this juncture that the sales side of hotels is conducted almost entirely through the Tabular Book, which constitutes at the same time the analysis of sales and the Sales Ledger section. The Tabular Sheet consists of a multi-column sheet, each column being the account of a customer. The left hand side of the page printed with the commodities and service which you are selling, starting with apartments and running through breakfast, lunch, tea, dinner, special meals, etc., through all the services, to a total which represents the daily debit against the customer. The line immediately under this is the amount brought forward from the previous day, if any, giving a total amount owing followed by a line for cash paid, the last line being amounts carried forward to the next day. This is controlled in total by total columns on the right hand side of the page, the cross addition proving the arithmetical accuracy of the entries.

The Tabular Sheet is arranged in the exact form of the hotel bill, with which you are familiar, and in most hotels the bill and the Tabular Sheet are kept together to obviate delay in bills at the busy times, such as first thing in the morning. The information for entry on the Tabular Sheet is received from all departments by means of chits and it is essential that a regular and running connection of these chits takes place, as will be described in various later sections of this paper.

The Purchase side of hotel bookkeeping is kept in the ordinary analysed Invoice Book and Bought Ledger methods used in most businesses.

Baths

Baths, especially Turkish, Russian, Sea Water and Medicinal Baths, are an excellent example of the difficulty of control in this business. Turkish Baths, for example, are often sold more to outsiders than to residents and this constitutes either a cash business or a ticket business in the cases where books of tickets are sold at

a slight discount. Most hotels have a separate entrance to baths in order to cater for people who, requiring a bath, would prefer not to pass through the public lounges, etc., of a hotel to reach the bath, such as golfers after a particularly dirty round of golf. Thus, it is not practicable to insist upon tickets being obtained at the office before taking a bath, and in smaller hotels it would not pay to have a cashier at the entrance to the baths issuing tickets, as the trade would not warrant the expense. We are, therefore, thrown back very considerably on the honesty of our attendants. I say this with a certain amount of regret, but in all our attempts to control our industry, we are compelled to take account of the tendency of certain sections of the public to get something for nothing and it is surprising the length to which our "shop lifters" will go in such ways as tipping our servants excessively to obtain an advantage in a charge. It is definitely economy to give a bathman 2/- instead of 1/- to avoid payment of 5/- for a Turkish Bath and unless we are doing a trade sufficient to warrant a cashier on the door, it is very difficult to check such an attempt. A duplicate receipt system is about the only safeguard one can conveniently put in in smaller places and an occasional check of the number of pieces set counterfoils against the number of pieces sent for laundering is well worth the trouble.

Garage

The garage is similar, but rather easier of control, because a good deal of the revenue from this department in most hotels comes through the books and is not paid for in cash. Petrol and oil present little or no difficulties, as a stock record can be kept with the present day efficiency of pumps and meters, and a useful form here is a 3 column record headed "cash," "charged," and "house," the totals being checked with the meter records daily, or weekly. Here again, the other services present the problem. In this business one has to avoid all possible irritations and many of you would greatly resent having to apply at the office of an hotel to have your car washed. You expect us to give the same service as an ordinary garage and you would, therefore, consider it quite sufficient to instruct the garage man to have your car washed by a certain time and in this event, we are again dependent upon your honesty and his to see that the amount paid is included either on your bill, if charged, or in his records if paid in cash. Ordinary garaging for residents' cars is not difficult to control. In all hotels a record should be kept by the hall porter of the number of cars arriving and discharging luggage. These should be noted in the bill office on the customer's account and checked with the returns from the garage of the number of cars garaged therein. If, therefore, a garage does not return the correct number of nights which it is known the customer has stayed in the

hotel, this becomes a matter for enquiry. Notices should be exhibited in the garage disowning all liability for cars in respect of which a correct voucher has not been issued, and this gives a reasonable, if not precise check on the chance cars housed.

One other section which requires rapid control is what is known as the "Paid out for Visitors" section. In most good hotels a customer who is known, or of any standing, can have the facility of having all small items such as taxis, and in many cases large items, paid for by the hall porter, or the cashier and charged through on to the account. In the luxury London hotels, it is quite ordinary business for wealthy guests to spend the morning shopping in Bond Street, all goods being sent "cash on delivery" to the hotel where, if they are known, hundreds of pounds may be laid out on their account by the cashier. It will readily be seen that a complete and efficient liaison must exist between the cashier and the bill clerk to see that any customer leaving hurriedly is charged in full for all goods paid for. In this connection, the hotel takes no profit on this transaction, as it is merely one of the services which a good hotel must present for its clients.

Control of Sales

We now come to the two most thorny matters in hotel work, and that is the control of the sales of drink and food. When one considers that in a small cocktail bar there is usually offered between one or two hundred commodities out of different bottles and containers, it will be seen how impossible it is to control the measuring of individual drinks costing from the well-known price of 4½d. up to 4/- or 5/- for an expensive cocktail or liqueur. The only method of control is by periodical stocktaking and this takes place in very well staffed establishments over-night or first thing in the morning, in lesser places weekly, and I am afraid in many places only monthly.

Drink Sales

The basis of all drink sales is the cellar book kept in the wine cellar into which all goods received are entered on loose leaves, one leaf for each size of bottle stocked in each commodity. Thus one has a page for quarter bottles, a page for half bottles and a page for whole bottles of John Haig whisky. On the left hand side is entered all stocks received from central store or tradesmen. Issues are recorded on the right hand side analysed in the various departments to which they are issued, such as Smoke Room Bar, American Bar, Dining Room Dispense, Grill Room Dispense, Night Porter's Stock, Banqueting Department, etc. There is no excuse whatever for any discrepancy in the cellar book, as no breakage up of bottles occurs in the cellar, and the items issued are specific articles subject to a perfectly good count. Each bar requisitions in duplicate for its requirements day by day and the cellarman obtains the signature

from the controller of the bar for goods put in. It is from this point that the trouble begins. In the first place, by the use of ordinary measures (and the optics used on spirit bottles has now improved the situation a good deal in this respect), it is impossible to give complete full measure of customers' requirements without spilling and needless to say no one is going to waste commodities in this way. In stocktaking, therefore, one has to work with a small surplus mind, usually in well-conducted bars about 3 per cent. represented by the amount of froth on a glass of beer and the slight deficiency in serving a full glass of wine, cocktails, etc. In stocktaking, a complete stock is taken down in detail even to the extent of every fraction of a bottle which might be served. Thus, one has available three measures for spirits known as 4 out, 5 out and 6 out. These terms represent the number of portions obtained from a gill and as a bottle of wine contains a sixth of a gallon and a gallon weighs 160 ounces, it will be seen that a 5 out measure, which is the one most commonly used, consists of an ounce of fluid and the usual small whisky served in one ounce, that is 26 to the bottle. This figure varies according to the other measure as between 21, 26 and 32, so that in stocktaking one must measure a partially used bottle in fractions such as these.

All drinks should be served in properly graded glasses, and the use of fake glasses, which unfortunately has crept into certain establishments with a view to making a drink look larger, is strongly to be deprecated. Very few people realize how the sale of drink is governed by weight. For example, one expects to obtain between 13 and 14 glasses of sherry from a bottle and this is obtained by the scrupulous use of a two ounce glass. I can quite conceive that there are many members of my audience who have never realised, as yet, that an ordinary glass of sherry is precisely twice the amount of the ordinary small whisky with which they are served, but this is a fact and in properly conducted businesses, these points make for simpler and more efficient control.

Stocktakers have now very efficient methods of measuring bottles. There is no question of emptying the bottle, as they have for example cut-out cards, one for each individual shape of bottle marked out with the measures, so that by slipping a cut-out over the bottle, the exact number of measures left becomes a simple matter. When stock has been taken, the stock to commence plus issues, less the stock to finish, represents the amount sold. Each commodity must then be worked at the selling price, to the amount which should have been received, which is then compared with the cash taken, or the checks issued. As I have previously said, nothing less than perfection should satisfy us and, in fact, if one does not make a small surplus ranging from nothing to 3 per cent. doubt is cast on the

efficiency, accuracy or honesty of our employees. So much power lies in their hands whereby they can create a reserve for themselves, especially in serving mixed drinks, that there is no excuse whatever for deficiencies.

Pilfering

I would like to disgress a moment here between the two subjects, to give you some idea of the methods of theft which are prevalent in catering establishments and I think I should start by trying to give you some idea of the psychology behind the tremendous amount of pilfering which goes on, I am afraid, in our trade.

To begin with, our service staff are paid merely nominal wages and are dependent to a large extent for their remuneration on the customers' bounty. This, as a system, I strongly deplore, but I am afraid my view does not meet with general support in the industry. I, personally, think that a 10 per cent. service charge, such as exists on the Continent is infinitely better than tipping, and I have satisfied myself in regard to this day by the fact that on offering all guests booking accommodation in one hotel the alternative of 10 per cent. or uncontrolled tipping, over 70 per cent. availed themselves of the service charge in the first year of the system. There are, of course, objections levelled against the system, the chief one being that some people will always over-tip to attempt to obtain better service, but this applies in the ordinary system of tipping, and to my mind is not a sound objection.

The tipping system is prone to create in the mind of staff the "catch as catch can" policy and this is, in itself, an evil.

The next important consideration is the fact that commodities which we are handling are the commodities which are most necessary to human life and pleasure. Many of our staff, especially male staff, live out and have families to keep, and whilst in say, Engineering, there is little temptation to steal a bar of iron there is an enormous temptation to get away with any food or drink, as not only are they requisite to the life of the staff outside, but they can be disposed of so readily by human consumption and the usual problem of disposing of anything stolen does not arise.

The third consideration is the amount of apparent—though perhaps not actual—waste which goes on inside an hotel. Food unused at the immediate function or meal for which it was provided, can be used later as cold joints, made up dishes, or for staff feeding, but a certain amount not used in these directions inevitably is thrown away.

The moral effect of this on the minds of staff is bad and one can hardly wonder at a tendency to take home food which it is known might be wasted, for use where it will be thoroughly appreciated.

The methods adopted in pilferage are many and wonderful. On

the drink section, for example, one never knows who is being robbed. It is possible for the hotel proprietor to be robbed, his customer to be robbed, or even his tradesmen to be robbed, and I will give an example of each type.

The removal of stock is, of course, the simplest method of the employer being robbed, but a much more subtle method is for staff to introduce into the hotel, stock purchased by them outside and sold inside at retail prices; thus all that the employer is losing is profit on the transaction and not the stock at all. That has actually happened in my experience at a staff party, where, out of consideration to our staff, waiters were hired from outside, so that practically the whole of our staff could join in the annual staff party. When the extra waiters were being paid off at the end of the evening, it was found that in their pockets they had partially finished bottles of spirits of a brand which we did not stock, thus proving that this had been brought in from outside. It would appear from this that the whole of the staff, our own and imported, had been having a thoroughly good party at our expense in more ways than one and it was a problem as to whether the imported staff had not procured the strange whisky from their own employer's stocks, as well as robbing us of the profit thereon.

The customer is robbed by unscrupulous staff by short measure being given, especially in cocktails and by a substitution of drinks, which should occupy the attention of every hotelier and should be sternly repressed, as the goodwill of an hotel can be affected without the proprietor's knowledge by a smart barmaid making illicit surpluses for either herself or her employers.

One of the stangest examples of theft which came to my knowledge was the filling up of empty beer bottles with the bottoms of draft beer from the pumps. These were returned to the bottlers as ullages and full credit allowed for a considerable time, the barmaid, of course, taking out of the till the selling price of the credit notes thus obtained.

Another trick of a similar nature where only the profit was being stolen, came to light through the discovery amongst the empties of a large number of half bottles of spirits. As there is no reason whatever for an empty half bottle to remain on our premises, as it has no returnable value, suspicion was aroused, and it was found that a barmaid was filling up spirit bottles when nearly empty with half bottles which she was entering through her books as wholesale sales at 6/6 and then recovering thirteen 10d. for every 6/6 thus entered.

In the food section just as many tricks are employed. All hotels of any size have a man at the back door with a general instruction that outgoing parcels must be examined, and parcels brought in must be either left at the door or examined on the way out, but strange things have occurred by which such a system can be diverted. One

portly staff-maid, staggering a little as she left the building, was found to have a whole ham strung round her waist underneath her clothes, and it was only the extraordinary clumsiness of her walk which drew attention to this.

Incidentally, one hotel found a splendid market in its own town for a commodity which had usually been brought from away and found after a few weeks that it was buying back its original purchase of these goods time and time again until discovery was effected.

Theft and wastage is not always for the sake of gain, it can be from sheer greediness. In one hotel where an incomplete system of control existed, it was noticed that there was no return to the kitchen of milk sent on to the floors for morning tea, which, in this particular case, was brewed in the chambermaid's pantry on each floor. An examination of the morning tea checks was made and on one occasion it was found that, although four pints of milk had been issued to the floors, only eight cups of tea had been served before breakfast. A quick visit by the control clerk on to the floors found several chambermaids enjoying bowls of bread and milk, although they had already had a perfectly satisfactory breakfast in the staff hall.

Another form of leakage which I have in mind only goes to show the unwisdom of selling anything for cash that can possibly be checked on in the hotel. In one hotel, where the lounge waiter took cash without issuing bills, and where a particularly good afternoon tea was served, it was found that in the case of two people ordering tea, it was a habit of one of the waiters to check for one in the still room and on his way through to the lounge pick up a further cup, saucer, plate and spoon, etc., from the Staff Hall and serve the one tea as two, thus getting 3/– for what he had checked in as 1/6. This caused, of course, the whole of the staff china to be changed, which shows to what pretexts one is driven at times to effect an efficient control.

Food Costing

I now come to the subject which actually interests me most and that is food costing and in this connection a very sharp division must be drawn between the inclusive terms hotel and the **à-la-carte** restaurant.

In the first place I will deal with marketing, which to a large extent applies to both. Firstly and fundamentally we have to review the markets under five main headings, namely, meat, fish, poultry and game, vegetables and groceries, and in the groceries section will be included canned goods.

In many hotels, especially those which are fairly remote from wholesale sources, it is found necessary to enter into contracts for supplies. The contract prices are best determined by reference to the high and low monthly prices averaged for past periods. In any

case the prices paid must not exceed those at which it is possible to obtain the requisite profit.

My experience in the catering trade shows that the only safe line on which to work is that the raw product must not cost more than 40 per cent. of the finished price. This may appear to be a large profit to some of you, but you must remember that out of this we have to pay the cost of cooking and serving, feeding our staff (which can easily amount to four or five per cent. of our gross turnover), and overhead charges which in the catering trade are colossal compared with other trades. For example, the rates of an hotel are often 3 to 4 per cent. of the turnover. Wages, even though we pay such poor wages to our service staff, absorb from 12½ per cent. to 17½ per cent. of our turnover, and the only earnings we have which in any way approach 100 per cent. gross profits are apartments and on this item outside London there are very few hotels working to more than a 60 per cent. capacity, whilst in seasonal places and in cities such as this (Manchester), where we have little or no week-end trade, the letting capacity often drops to 30 per cent. or 40 per cent. However, to deal with our first heading.—

Meat—

There are only three animals normally to receive consideration—the steer, the sheep and the swine. In selecting roasting joints of beef there is the choice of the sirloin and the forerибs, the latter representing a saving of 10 per cent. Although I do not wish to touch on the cheaper cuts, as an illustration of what can be done in improving percentages I would point to the silverside which shows a reduction of some 30 per cent. on the sirloin.

It will be found that the average loss for roasting joints in cooking and bone amounts to 45 per cent., resulting in 55 per cent. residue for sale. Now the nett weight required for the restaurant depends upon the size of portion to be served, i.e., whether 2 ozs., 3 ozs. or 4 ozs. and the gross weight to be purchased will be reduced to a formula.

Thus, you will require for 100 persons, according as to whether you serve 2 ozs., 3 ozs. or 4 ozs., of cooked meat, 23 lbs., 34½ lbs. or 46 lbs. of raw meat.

From the foregoing will be observed the great importance of the carver, and how the best of buyers can be offset by the weak link in the chain represented by the carver; and when the carver in his turn is confronted with an overcooked joint, with its concitant wastage of 10 per cent., the resultant detriment to our profit is clear.

The percentage of loss is different for boiling and stewing, the average loss being some 30 per cent., thus showing 70 per cent. nett weight of cooked meat.

For the grills, where but few are required, these will be furnished

by the fillet from the sirloin and will be allowed for or costed therein Where the grill sales are more important, there will be found the steakpiece.

One weighing, say 32 lbs., will furnish about 11 lbs. of steak meat, giving some 23 steaks about 2½ lbs. of fillets, yielding five fillets, 8 lbs. of piemeat, 4 lbs. of suet and 6½ lbs. of bone.

With regard to mutton or lamb, we have to consider four principal joints, the leg, shoulder, saddle and loin, our remaining percentages after roasting being 65, 60, 55 and 75 per cent. respectively, the latter being calculated as served with bone, but it is really only profitable when boned, stuffed and rolled.

It will thus be seen that for 100 persons, according as to whether we serve 2, 3 or 4 oz. portions, we shall require 19, 30 or 38 lbs., gross weight, and, in the case of loin served with bone, when portions will be 6 or 8 ozs., 66 or 84 lbs. weight, and the resultant saving in the usage of the leg will be 5 per cent. over the shoulder and 10 per cent. over the saddle.

Fish Supplies—

We will now turn to fish supplies. Here we find the most rapid fluctuations in price, and the purchase should be limited to daily requirements. When prices rule high, portions can be reduced, but it is a better policy to keep to standard portions and sustain profits by purchases of fish within the limit of one's percentage.

As regards portions served, these are of defined average weights, varying with the species, but it would take up too much of the time at my disposal to attempt to illustrate them.

Fish, however, plays a very important part in every meal of the day. It is, however, one of the media by which a skilful purchaser can introduce into the hotel a touch of personality, which will raise it from the rut of routine.

There must also be taken into account, when costing fish in particular, the cost in connection with the preparation and service, the former denoting the class of cookery such as boiling, steaming, frying, grilling, poaching or baking, and the latter the accompanying garnish or sauce.

For boiling, steaming, poaching and baking the additional cost will amount to 5 per cent. of the cost of the fish in the case of the coarser kinds down to 2 per cent. for the more delicate fish. The greater the number catered for the less will be the preparation costs until we reach a maximum of, say 100, when the figures are down to 2 per cent. and ½ per cent. respectively.

On the grill, the costs assume their lowest proportions, being not more than 1 per cent., whereas in frying we go up to 10 per cent. through the essential coating of eggs and breadcrumbs or batter.

In service costs, sauces and garnishes, vary in accordance with

the essential ingredients, and it can be taken as an axiom that the cheaper the fish the more expense will be necessary to mask it.

Poultry and Game—

We will now visit the poultry and game market. Here the chicken claims our chief attention, with the turkey, goose and duckling in their seasons.

There are two methods of estimation for chickens, one by weight and one by portions, the latter being the only really satisfactory method. As an illustration, we will take a concrete case of catering for 100 persons.

If we go by weight we shall require ¾ lb. per head, or 75 lbs. weight. For average birds of 2½ lb., this means 30 birds.

Purchased as four-portion birds this is at once reduced to 25 birds, which is not only a saving of five, but, what is far more important, provides a certain and safe basis upon which this item of food can be controlled from kitchen to consumer. It also assists to standardise the portion.

For entree work 3-4½ lb. birds are more pofitable as giving 10 or 12 portions, i.e., 4 leg, 2 wing, 4 breast and 2 back.

When estimating for turkeys it must be realised that considerable additional cost is requisite in the garnish.

The cost of both goose and duckling is more in proportion than chicken, as the birds will not yield the proportionate portions.

In regard to game-birds, the coarser the bird the more expensive sause and garnish will be required, the more delicate birds requiring the simplest cooking, dressing and service so as to preserve the full flavour.

A partridge will suffice for two portions, a pheasant for four, a wild duck for two, quail and snipe but one apiece, and that excellent bird of doubtful plumage—the hare—will do for six.

Vegetable Supplies—

The closest watch is required on this market, which again fluctuates, but the greatest guard of all must be maintained in the vegetable store, in which there is frequently an inordinately high percentage of wastage due to careless storage and handling by being left in sacks and other containers in damp surroundings.

Vegetables also have their place in the portion scale, such as 6 heads of asparagus, beans and sprouts 3 to 4 portions per lb., average cauliflower 4 portions, marrows 8-12, and potatoes per cwt. 200 portions boiled, 200 baked, 250 fried and 300 mashed.

Grocery and Canned Goods—

Our final commodity comprises the grocery and canned goods section.

In a seasonal hotel the average seasonal consumption must be known in order to take advantage of purchasing cased lots in a fall-

ing market, and these lots should always be bought against sample. Most careful records are essential as to price, quantity, date purchased, rate of consumption, note of appreciation and, as far as possible, standardisation should be attained.

It is extravagance to purchase beyond requirements in order to effect a small saving, and for the smaller caterer it is asking for wastage to purchase in large containers.

Tea must be suitable to the local water and a separate tea, which draws quickly, for staff purposes. 1 lb. of tea suffices for 80 single pots.

Coffee for breakfast and after-dinner should be of different qualities. 1 lb. goes to the gallon for breakfast purposes and 1½ lbs. for dinner.

Bacon is a frequent source of wastage. It is useless to buy sides unless the inferior cuts can be used, and the whole side utilised within a week. It is otherwise far more profitable to purchase smaller cuts such as middles and eliminate wastage.

An average side of bacon, weighing 60 lbs. will yield 8 lbs. collar, 10 lbs. back and ribs, 8 lbs. long loin, 3 lbs. corner gammon, 8 lbs. fore hock, 6 lbs. cheek steaks, 3 lbs. thin streaky, 4 lbs. of flank and 10 lbs. gammon hock.

10-12 rashers to the pound is a useful hotel portion.

Butter is best purchased as required and 1 lb. should yield 40-50 pats or 80-100 curls.

Kitchen and Stores Control

Now to take the kitchen in which we will assume that 100 per cent. efficiency obtains in its equipment and personnel.

Here is the start of our control system and the small expenditure entailed in its installation and upkeep will be more than amply repaid by the elimination of leakage and wastage, and the judgment which can be unerringly formed of the efficiency of departmental heads.

The closest daily liaison must be kept between the office and the kitchen as to the volume and class of trade expected, as it is upon this that the estimates for requirements are based.

Each department—kitchen, still-room, vegetable store and stores—then requisition for their needs in some simple form showing stock in and and quantity required. These, on purchase, whether by personal attendance or by telephone, are immediately entered upon an official order form, the serial number of which must be quoted on the invoices in duplicate which accompany the goods.

Where goods are purchased per telephone, the description. quantity and prices will be at once entered on the order form.

On receipt of the goods the goods reception clerk, or person receiving. will see that the delivery agrees in all respects with the delivery notes, one of which he will sign and return to the firm's representa-

tives, the other being retained. The goods, on distribution to departments, will be signed for in their turn by those receiving them.

The invoices will then be entered in the Invoices Summary, a glance at which by the manager from time to time, together with the invoice file, will enable him, by seeing the signatures thereon, to see whether the system is being kept up, and is a stable guarantee against irregularities.

The invoice prices are next recorded, as relevant, in the Price Record, which is best kept on the card index system tabulated for twelve months, each month being sub-divided into low and high prices. This record is particularly invaluable in the case of seasonal hotels.

As each high or low record is reached, it is primarily entered in pencil, and at the end of the month the final record is entered in ink.

Menu Planning

Having covered to some extent the problem of marketing, the next most important branch of our problem is menu making. In an inclusive-terms hotel, one takes the average amount of inclusive term for the previous year and credits kitchen with two-thirds of this amount as its allocation. Thus, if an hotel takes guests from 15/- per day up to 27/6 one finds an average of something like £1 1 0 and 14/- of this amount is credited out of whatever charge is made to kitchen. This is imperative as, generally speaking, the customer occupying a room with a private bathroom at 27/6 receives precisely the same food as the customer who is content with the small room in the bachelor wing at 15/- and it is imperative, therefore, for any efficient kitchen control to credit that deparment with a standard amount from both, leaving the Apartments Account to bear the fluctuations in charges. When the Control Department have this figure of 14/- in front of them, it is comparatively easy to apportion this between the meals. Taking out 60 per cent. as being a reasonable gross profit, one finds 5/ available for the cost of a day's feeding and this should be apportioned as follows:—

Breakfast	1/5d.,	being	40%	of 3/6d.
Lunch	1/7d.,	"	"	4/0d.
Dinner	2/7d.,	"	"	6/6d.
Total	5/7d.,	being	40%	of 14/0d.

Taking our available amounts, we now find that our dishes must cost no more than the following:—

Breakfast

Cereals or Fruits	15 or 2½
Fish	25 or 4
Meat	40 or 6½
Bread & Preserves	15 or 3
Tea & Coffee	5 or 1
	1/5d.

Lunch

Hors d'Oeuvre	15 or 2½
Soup	5 or 1
Fish	20 or 4
Joint	35 or 6½
Sweets	10 or 2
Cheese & Sundries	15 or 3
	1/7d.

Dinner

Hors d'Oeuvre	15 or 4½
Soup	5 or 1½
Fish	15 or 4½
Entree	15 or 4½
Joint or Poultry	25 or 8½
Sweets	15 or 4½
Savoury or Dessert	5 or 1½
Coffee	5 or 1½
	2/7d.

The size of portions or the grade of fish served, particularly in the case of fish, joint or poultry, as previously mentioned, must be decided with the market prices reigning on the day in the composition of the menus for the various meals.

The usefulness of such apportionment is apparent when we realise that in a seasonal hotel we know generally the number of guests for whom we have to cater, and thus we find that with 240 guests in the hotel we must not spend any more than £4 for lunch fish, or £8 10s. for the dinner joint with its accompanying vegetables.

Whilst we cannot be bound to restricting ourselves to, say, 4d. for fish at lunch, it is imperative to watch that the meal totals are kept fairly standard; thus, one would not put an expensive fish and an expensive game dish on the same dinner menu. If, according to the season, it is useful to give grouse, one must serve equally good, but less expensive fish, entree and savoury dishes, and this applies to menu making in general; particularly in banqueting, balanced menus in regard to price are essential. These are inevitably discussed in advance and three or four forms of menu submitted. It is very seldom that one comes up against a complete gourmet who insists on the most expensive dishes on every line, but in this event, one must insist on the customer paying the price represented by such a service. It is quite a simple matter to lead a customer into a perfectly good menu for a 10/6d. dinner without having everything of the most expensive type of food thereon.

Control in an exclusive charge hotel is, in some ways, simpler than in a restaurant service, but slightly more complicated in other ways. Where a customer has an option of six or seven dishes at a meal, he is unlikely to eat them all and therefore a lot of missed portions are going to be available. The simplest system is a table chart at the kitchen clerk's desk, divided into squares representing the number of stations available in the dining rooms, each square being numbered in the left hand top corner to correspond with the stations, with a space alongside for the already known number of guests at the station. Printed or stamped in the squares is a list of courses available for the meal in question, and as the waiter calling for a course, the checker has merely to tick off the course, check with the number of guests and block out any previous courses missed. This forms a fairly good check on the waiting staff and although nothing like so efficient as a more elaborate checking system, has simplicity to commend it.

In a restaurant service there is no other system possible, except checking off every dish and this can very usefully be done by a bill system, whereby the right hand edge of the bill consists of half a dozen perforated squares numbered with the bill number which can be filled in by the waiter and handed in to the service when asking for a dish. This necessitates the waiter entering the price of the dish on the customer's bill at the same time, as the small checks eventually re-assembled in the control department form a perfect check on the waiter when compared with the bill paid at the desk.

An excellent system has been evolved by the National Cash Register Co., who have produced a machine which does practically everything but talk. This is kept at the entrance to the service and has the following control keys:—Waiter's number, Station number, Commodity number under some 30 headings, and price. The waiter has to press the requisite buttons to obtain a check for the selling value of the dish he requires, which is also printed by the machine with the department from which it is to be drawn, such as ales and stout, spirits, liqueurs, still-room, hot plate, etc. This amazing machine retains all these figures in its mechanism until the waiter comes along with his bill made out for the particular station. This is made out and added up by the waiter in pencil, but printed across it from corner to corner is an arrow inviting the customer to pay the sum at the point, or in the right hand top corner of the bill. The bill is inserted in a slot in the machine and by use of a final lever, the total of the items indented for during the service in respect of that particular bill is printed at the top, and this figure must agree with the addition made by the waiter. Further than this, the machine retains a complete analysis of the day's sales which are available for the control department at will.

So far, my description of the control has only dealt with the service. The kitchen control is a much more involved system and it is practically impossible in most places to have a running check accurate enough to check every ounce of food purchased, but a wonderful moral effect can be produced, in the event of unsatisfactory results, by working back from an analysis of the bills into their component materials and costing up what a service of lunches, or a banquet, or the dinner time turnover in the restaurant should have cost and holding the chef responsible for leakages.

It is advisable in places of sufficient size to have a store for every class of food and to have the kitchen indent for the requirements for making certain dishes. Thus the roast cook would indent for a joint of a certain size and it would be known that this represented a given number of portions of hot meat. At the end of the day, if this has not been consumed, it should be returned to the store and credit given for the residue which would then be re-issued as a cold joint, or as the material for a made-up dish, and the number of hot portions represented by the difference could then be checked off against the number served, and any shortage would be a matter for inquiry from the carver or the service.

In food costing I have always found it a tremendous advantage to work on percentages on cost rather than percentages on selling. The advantage of working on cost is that the fluctuations show more vividly. For instance, a fall of 4 per cent. from 60 per cent. to 56 per cent. on turnover is shown as a fall from 150 per cent. to 128 per cent. on cost, which far more readily commands attention.

I feel that in the time at my disposal I have attempted practically the impossible in trying to cover the costing and control of such a multiplicity of items as we have to deal with, but if I can elucidate any point further, by answering questions which may have occurred to you, I shall be extremely happy to do so.

REFERENCE LITERATURE

RECEIVED IN FEBRUARY

Fixed Asset Appraisals and Accounting. The Canadian Chartered Accountant, February.

Inventory Values for Certain Industries, Basic. The Canadian Chartered Accountant, February.

Inventory Control, Frozen Capital Made Productive by. National Association of Cost Accountants, February 1.

Inventory Control as Applied by a Liquor Store System, Multiple Store. National Association of Cost Accountants, February 1.

Wastage in Material. The Australian Accountant, December.

Catering Trade, Costing and Control in the. The Cost Accountant, January.

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CHAPTER NOTES

TORONTO

Toronto Chapter's meeting on February 18th was one of the best in its history, more than fifty members and guests turning out to hear Mr. J. F. Gibson, C.A., of the Dominion Income Tax Department, speak on Corporation Income Tax. Mr. Gibson was introduced by A. S. Tindale, C.A., who spoke highly of his ability and of his fair attitude in dealing with taxpayers. Mr. Gibson presented his material in a very clear and interesting manner, dealing with interpretations or rulings regading depreciation, goodwill and various other items entering into the income tax calculation. He pointed out that certain rulings, while seemingly unjust in a few applications, were necessary to protect the department against wholesale abuses.

The next Toronto meeting will be on March 19th, when the members will visit the plant of Viceroy Manufacturing Company, Ltd., at 3.30 p.m., following with dinner at the Old Mill, and addresses by H. M. Hetherington and other officers of the company.

HAMILTON

The Hamilton meetings for the balance of the season are as follows:—

Feb. 17th—Speaker:—F. M. Post, Electro Metallurgical Co., Niagara Falls, N.Y. Subject: Accounting for Manufacturing Overhead.

March 3rd—Speaker:—G. R. Gillelan, Agnew Surpass Shoe Co. Brantford, Ont. Subject: Chain Store Accounting.

March 17th—Speaker:—H. H. Brondson, British American Oil Co. Ltd., Toronto, Ontario. Subject: Costs in Oil Refining.

April 7th—Speaker:—C. D. Landell, Canada Dry Co., Ltd., Toronto, Ontario. Subject: What the Executive Requires from the Cost Accountant.

April 21st—To be arranged.

TWO DOMINION DIRECTORS RESIGN

We regret to announce the resignation of Mr. James Turner, C.A., of The T. Eaton Co., Ltd., Toronto, from the Board of Directors of the Society. Mr. Turner was president of the Society in the year 1927-28.

Mr. E. D. MacPhee, of York Knitting Mills, Ltd., Toronto, another member of the Dominion Board, has resigned from the Society, as he is moving to England.